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FOURTH

ANNUAL REPORT

OF THE

MEDICAL OFFICER OF HEALTH

(FOR THE YEAR 1902).

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GUERNSEY:
BICHARD'S PRINTING AND PUBLISHING COMPANY, LTD.,
BORDAGE STREET.

1903.

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REPORT

OF THE

MEDICAL OFFICER OF HEALTH

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RAPPORT DE L'OFFICIER DE LA SANTÉ PUBLIQUE.

Letter from the President of the Board.

Board of Health, Guernsey, June 15th, 1903.

Sir,

I have the honour to present the Fourth Annual Report of the Medical Officer of Health for the year 1902.

This Report was approved by the Board of Health at its meeting held on the 14th May last, when it was resolved that, with your permission, it should be printed as an Appendix to the Billet d'État, and that the usual number of copies for distribution to the Local Government Boards of England and Scotland and to other Public Health Bodies should also be struck off.

I have, &c., &c.,

JOHN N. BROUARD,
President, Board of Health.

To Henry A. Giffard, Esq., K.C.,
Bailiff,
and President of the States of Guernsey.

Letter from the M. O. H.

States Office, Guernsey, 10th May, 1903.

To the President and Members of the Board of Health for the Island of Guernsey.

Gentlemen,

I beg to submit for your approval my annual Report as Medical Officer of Health for the year 1902; and also as Appendices Mr. A. Collenette's observations on "The Weather," and Mr. T. J. Guilbert's account of the Drainage Works undertaken during that period.

I have, &c., &c.,

HY. DRAPER BISHOP,
Medical Officer of Health.

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REPORT.

POPULATION.

In the decade 1881-1891 there was an excess of emigration over immigration of 760. In the last decade there was an excess of immigrants to the number of 420 in a total increase of population of 4,980. This alteration is probably due to the number of persons who have settled in the Island in connection with the growing industry. Taking the average yearly increase of population for the last decade as roughly 500, the population of the Island in the middle of 1902 is computed to be 40,550. (Calculated according to the natural increase—excess of births over deaths—it would be 40,535, a difference of 15 only).

The density of population is as nearly as possible 2·5 persons per acre, a high proportion as compared with other Islands; as for instance Jersey, where the ratio is 1·85 persons per acre, the Isle of Wight, where there is only one person to every three acres, and the Isle of Man with one to every 2·6 acres.

Table I. (Incorp. Soc. of M. O. H., 1900), for Whole District.

YEAR.	Population estimated to middle of each year.	BIRTHS.		DEATHS UNDER ONE YEAR OF AGE.		DEATHS AT ALL AGES.	
		Number.	Rate.*	Number.	Rate per 1,000 Registered.	Number.	Rate.*
Column...	1	2	3	4	5	6	7
1892	35,529	1,101	30·99	185	168·0	679	19·09
1893	35,884	1,143	31·91	185	161·9	692	19·28
1894	36,289	1,093	30·12	135	123·5	632	17·41
1895	36,741	1,126	30·62	175	155·4	712	19·38
1896	37,245	1,228	32·97	129	105·0	547	14·68
1897	37,801	1,157	30·60	193	166·8	708	18·73
1898	38,415	1,161	30·22	194	167·0	705	18·35
1899	39,072	1,121	28·69	151	134·7	666	17·04
1900	39,703	1,011	25·46	145	143·4	624	15·72
1901	40,300	1,096	27·20	190	171·3	699	17·34
Averages for ten years, 1892-1901.	37,698	1,124	29·81	168	149·4	666	17·66
1902	40,550	1,128	27·8	161	142·7	657	16.2

* Rates calculated per 1,000 of estimated population.

BIRTHS.

The number of births registered during the year was 1,128, 557 being females, 571 males. The birth rate is, therefore, 27·8 per 1,000, which is higher than that for 1901, and still more so than that for 1900, but it is lower than the average birth rate for the last ten years, which was 29·81. In England and Wales the birth rate in 1902 was 28·6 per 1,000; the rate in 1901 was 28·5 per 1,000, being the lowest on record.

DEATHS.

The number of deaths during the year was 657 equal to a death rate of 16·2 per 1,000. It has only twice been lower in the last eleven years. This is slightly lower than that of England and Wales for 1902, which was 16·3, and is the lowest death rate on record.

The number of deaths under one year was 161, being equal to a rate of 142·7 per 1,000 births. This is considerably lower than that of 1901, which was 176, but in that year there were 32 deaths from Whooping Cough, as compared with only 4 in 1902.

In 1901, 26 deaths were returned as occurring from Summer Diarrhœa in infants under twelve months old; in 1902, a comparatively cold summer, only 12 such deaths occurred. Convulsions in 1901 caused 50 deaths; in 1902, 51 deaths.

The number of deaths occurring from Senile Decay was 81, no fewer than 38 were in persons over 80 years old, and 11 were over 90 years of age: these are particularly gratifying figures. In the Town Hospital and Lunatic Asylum there were 34 deaths, and in the Castel Hospital and Asylum 15 deaths were registered during the year.

The system of death registration obtaining in Guernsey is very unsatisfactory, as a large number of deaths are registered without any medical certificate of death being produced. Apart from the very obvious dangers of such a system, it is difficult to get satisfactory statistics, when such a comprehensive but vague statement as "Complication of Diseases" is given as the cause of death. My predecessors have both called attention to the urgent necessity of a revision of the law dealing with this matter; an admirable "Projet de Loi" has been prepared by yourselves and submitted to the Crown Officers, which I earnestly hope the Royal Court will soon see fit to pass.

Table A.

RETURN OF DEATHS REGISTERED DURING THE YEAR 1902.

PARISH	*A*	*B*	*C*	*D*	*E*	*F*	*G*	*H*	*I*	*K*	Tl.
General Diseases and Injuries.											
Diathetic.											
Chronic Rheumatism	1	–	–	–	–	–	–	–	–	–	1
Diseases of the Blood.											
Anæmia	1	1	–	–	–	–	–	–	–	–	2
Epidemic.											
Cerebro-Spinal Meningitis	–	1	–	–	–	–	–	–	–	–	1
Diphtheria	4	1	–	–	–	1	5	–	–	–	11
Enteritis	9	1	2	1	–	–	–	–	–	–	13
Influenza	3	–	–	–	1	1	–	–	–	–	5
Measles	–	1	1	–	–	–	–	–	–	–	2
Scarlet Fever	–	1	–	–	–	–	–	–	–	–	1
Whooping Cough	4	–	–	–	–	–	–	–	–	–	4
Ill-defined.											
Brain Fever	–	1	–	–	–	–	–	–	–	–	1
Complication of Diseases	1	–	–	–	–	–	–	–	–	–	1
Dropsy	4	1	1	1	–	1	–	–	–	–	8
Hæmorrhage	1	–	1	–	–	–	–	–	–	–	2
Jaundice	–	–	2	–	–	–	–	–	–	–	2
Natural Causes	1	–	–	–	–	–	–	–	–	–	1
Other Ill-defined	1	–	–	–	–	–	–	–	1	–	2
Infancy and Old Age.											
Convulsions	13	11	5	3	1	5	1	2	7	3	51
Debility at Birth	10	4	6	3	1	2	–	1	2	–	29
Marasmus	6	5	3	–	1	1	1	–	2	–	19
Premature Birth	3	1	4	–	–	–	–	–	–	–	8
Senile Decay	33	10	7	14	–	5	–	3	5	4	81
Infective.											
Actinomycosis	1	–	–	–	–	–	–	–	–	–	1
Phthisis	16	8	8	4	2	5	3	2	2	1	51
Other Tubercular	12	–	3	–	1	1	–	1	1	–	19
Undefined Tubercular	4	–	1	–	1	–	–	–	–	1	7
Syphilis	1	–	–	–	–	–	1	–	–	–	2
Intemperance.											
Alcoholism	–	–	–	1	–	–	–	–	–	1	2
Cirrhosis of Liver	2	1	–	–	–	–	–	–	1	–	4

Septic.											
Endocarditis (Ulcerative)	2	–	–	–	–	–	–	–	–	–	2
Pyæmia	2	1	–	1	–	–	–	–	–	–	4
Rheumatic Fever	3	1	–	–	–	–	–	–	–	–	4
Septicæmia	2	–	–	–	–	–	–	–	–	–	2
Tumours.											
Malignant	18	4	5	3	1	–	–	1	1	1	34
Undefined	5	–	–	–	1	–	–	–	–	–	6
Violence or Accident.											
Burns	1	–	–	1	–	–	–	–	–	–	2
Drowning	4	–	2	–	–	–	–	–	–	–	6
Falls	3	–	2	1	–	–	–	–	–	–	6
Hanging	1	–	–	–	–	–	–	–	–	–	1
Run-over	1	–	–	–	–	–	–	–	–	–	1
Suffocation	–	–	–	1	–	–	–	–	–	–	1
Suicide	1	–	–	–	–	–	–	–	–	–	1
DISEASES OF SPECIAL ORGANS.											
Alimentary.											
Intestines	8	2	–	4	1	–	–	1	–	–	16
Liver	4	–	–	–	–	–	–	–	–	1	5
Peritonitis	2	1	1	–	–	–	–	–	–	–	4
Stomach	2	–	1	1	–	–	–	–	–	–	4
Nervous.											
Cerebro-Spinal Sclerosis	1	–	–	–	–	–	–	–	–	–	1
Encephalitis	1	–	–	–	–	–	–	–	–	–	1
Epilepsy	2	–	–	1	–	1	–	–	–	1	5
Meningitis	4	2	3	–	–	1	–	1	–	–	11
Paralysis	8	2	3	1	1	–	–	–	1	1	17
Tabes Dorsalis	–	–	1	–	–	–	–	–	–	–	1
Circulatory.											
Apoplexy	14	1	–	2	–	–	–	–	1	1	19
Morbus Cordis	38	4	5	2	3	2	–	1	8	4	67
Respiratory.											
Bronchitis	10	9	7	8	–	2	–	–	3	–	39
Broncho Pneumonia	2	2	–	–	–	–	–	–	1	–	5
Pneumonia	19	4	3	6	–	2	–	–	3	1	38
Urinary.											
Cystitis	1	–	–	–	–	–	–	–	–	–	1
Diabetes	3	–	–	–	–	–	–	–	1	–	4
Nephritis	8	1	1	1	1	–	–	–	1	–	13
	301	85	78	60	16	30	11	14	42	20	657

NOTE.—Explanation of Parish Letters: *A*—St. Peter-Port; *B*—St. Sampson's; *C*—Vale; *D*—Castel; *E*—St. Saviour's; *F*—St. Pierre-du-Bois; *G*—Torteval; *H*—The Forest; *I*—St. Martin's; *K*—St. Andrew's.

Table

(INCORP. SOC.

Names of Parishes.	ST. PETER-PORT.				ST. SAMPSON'S.				THE VALE.				CASTEL.				ST. SAVIOUR'S.			
YEAR.	Population estimated to middle of each year.	Births registered.	Deaths at all ages.	Deaths under 1 year.	Population estimated to middle of each year.	Births registered.	Deaths at all ages.	Deaths under 1 year.	Population estimated to middle of each year.	Births registered.	Deaths at all ages.	Deaths under 1 year.	Population estimated to middle of each year.	Births registered.	Deaths at all ages.	Deaths under 1 year.	Population estimated to middle of each year.	Births registered.	Deaths at all ages.	Deaths under 1 year.
Column ...	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D
1892.........	17121	496	327	85	4558	165	80	32	4041	152	89	25	2451	63	59	11	925	26	15	5
1893.........	17207	506	344	92	4632	157	63	16	4086	159	70	23	2479	72	63	16	935	29	14	2
1894.........	17301	477	310	67	4717	183	71	19	4172	145	56	12	2511	71	56	11	946	26	14	3
1895.........	17402	499	350	61	4813	156	93	41	4269	154	81	24	2547	71	44	9	958	31	22	8
1896.........	17514	520	242	55	4921	202	70	19	4377	169	67	20	2586	75	56	4	972	33	23	7
1897.........	17637	481	353	81	5042	179	89	38	4496	172	80	29	2627	69	47	11	988	33	15	2
1898.........	17770	467	335	78	5177	185	78	36	4626	161	78	25	2670	87	75	14	1007	24	15	4
1899.........	17914	469	298	47	5317	177	90	30	4768	166	72	28	2717	71	62	11	1027	24	19	6
1900.........	18044	436	302	65	5452	178	62	19	4921	170	82	25	2761	70	64	11	1045	30	17	4
1901.........	18162	440	303	66	5573	166	95	31	5082	167	101	45	2802	69	64	12	1062	27	14	3
Average of 10 years to 1901.	17607	479	316	70	5020	175	79	28	4481	162	78	26	2615	72	59	11	986	28	17	4
1902.........	18240	459	302	60	5622	175	83	25	5133	168	77	28	2812	65	60	10	1067	27	16	2

II.

OF M. O. H., 1900).

Names of Parishes.	ST. PETER-IN-THE-WOOD.				TORTEVAL.				FOREST.				ST. MARTIN'S.				ST. ANDREW'S.			
YEAR.	Population estimated to middle of each year.	Births registered.	Deaths at all ages.	Deaths under 1 year.	Population estimated to middle of each year.	Births registered.	Deaths at all ages.	Deaths under 1 year.	Population estimated to middle of each year.	Births registered.	Deaths at all ages.	Deaths under 1 year.	Population estimated to middle of each year.	Births registered.	Deaths at all ages.	Deaths under 1 year.	Population estimated to middle of each year.	Births registered.	Deaths at all ages.	Deaths under 1 year.
Column ...	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D
1892...	1335	59	29	12	446	7	9	0	675	15	12	2	2690	80	30	6	1317	38	29	7
1893.........	1351	55	30	11	446	14	10	1	687	21	13	1	2727	87	53	15	1334	43	32	8
1894.........	1371	44	26	7	446	8	7	1	701	21	10	2	2770	79	66	10	1354	39	18	3
1895.........	1394	54	29	7	446	9	10	2	716	18	14	0	2819	82	45	12	1377	52	24	11
1896.........	1420	56	20	6	446	14	10	0	733	27	7	6	2874	90	32	8	1402	42	20	4
1897.........	1449	37	27	6	446	15	9	1	751	25	14	8	2935	106	56	16	1430	40	12	1
1898.........	1481	57	29	16	446	13	5	0	775	29	12	3	3002	101	48	13	1461	37	30	5
1899.........	1516	50	32	10	446	6	9	1	800	22	19	6	3073	89	45	6	1494	47	20	6
1900.........	1548	57	25	9	446	19	8	2	822	23	19	4	3140	100	39	6	1524	38	17	2
1901.........	1577	57	23	8	446	6	6	2	842	27	20	7	3201	88	46	10	1552	49	27	6
Average of 10 years to 1901.		53	27	9		11	8	1		23	14	4		90	46	10		42	23	5
1902........	1587	53	31	11	447	14	12	4	851	30	13	4	3226	93	43	14	1564	44	20	3

Table IV. (Incorp. Soc. of M. O. H., 1900).

CAUSES OF, AND AGES AT, DEATH OF THE DEATHS REGISTERED DURING YEAR 1902.

CAUSES OF DEATHS.	WHOLE ISLAND.						
	All Ages.	Under 1.	1-5.	5-15.	15-25.	25-65.	65 and upw'ds.
General Diseases & Injuries.							
Diathetic.							
Chronic Rheumatism	1	—	—	—	—	—	1
Diseases of the Blood.							
Anæmia	2	1	—	—	—	1	—
Epidemic.							
Cerebro-Spinal Meningitis	—	1	—	—	—	—	—
Diphtheria	16	1	2	11	1	1	—
Enteritis	13	12	1	—	—	—	—
Influenza	5	—	—	—	—	1	4
Measles	2	—	2	—	—	—	—
Scarlet Fever	1	—	—	1	—	—	—
Whooping Cough	4	4	—	—	—	—	—
Ill-defined.							
Complication of Diseases	1	—	—	—	—	—	1
Brain Fever	1	—	—	—	—	1	—
Dropsy	8	—	1	—	1	2	4
Hæmorrhage	2	—	1	—	—	—	1
Jaundice	2	1	1	—	—	—	—
Natural Causes	1	—	—	—	1	—	—
Other Ill-defined	2	—	1	—	—	1	—
Infancy and Old Age.							
Convulsions	51	41	10	—	—	—	—
Debility at Birth	29	27	2	—	—	—	—
Marasmus	19	17	1	—	—	1	—
Premature Birth	8	8	—	—	—	—	—
Senile Decay	81	—	—	—	—	2	79*
Infective.							
Actinomycosis	1	—	—	—	—	—	1
Phthisis	51	2	2	3	10	33	1
Other Tubercular	19	5	3	7	1	3	—
Undefined Tubercular	7	2	1	1	1	2	—
Syphilis	2	2	—	—	—	—	—
Intemperance.							
Alcoholism	2	—	—	—	—	2	—
Cirrhosis of Liver	4	—	—	—	—	2	2

Septic.							
Endocarditis (Ulcerative)	2	—	—	—	1	1	—
Pyæmia	4	1	1	—	—	1	1
Rheumatic Fever	4	—	—	1	1	2	—
Septicæmia	2	—	1	—	—	1	—
Tumours.							
Malignant	34	—	—	—	—	13	21
Undefined	6	—	—	—	—	5	1
Violence or Accident.							
Burns	2	—	2	—	—	—	—
Drowning	6	1	1	—	1	2	1
Falls	6	—	—	—	—	5	1
Hanging	1	—	—	—	—	—	1
Run-over	1	—	—	—	1	—	—
Suffocation	1	1	—	—	—	—	—
Suicide	1	—	—	—	—	—	1
DISEASES OF SPECIAL ORGANS.							
Alimentary.							
Intestines	16	8	1	—	—	5	2
Liver	5	—	—	—	—	3	2
Peritonitis	4	—	—	—	1	1	2
Stomach	4	—	—	—	—	3	1
Nervous.							
Cerebro-Spinal Sclerosis	1	—	—	—	1	—	—
Encephalitis	1	—	—	—	—	—	1
Epilepsy	5	—	—	1	1	3	—
Meningitis	11	4	2	2	—	2	1
Paralysis	17	—	—	—	—	8	9
Tabes Dorsalis	1	—	—	—	—	1	—
Circulatory.							
Apoplexy	19	—	—	—	—	10	9
Morbus Cordis	67	—	—	3	1	39	24
Respiratory.							
Broncho Pneumonia	5	3	—	1	1	—	—
Pneumonia	38	8	10	4	1	10	5
Bronchitis	39	11	15	—	—	4	9
Urinary.							
Diabetes	4	—	—	—	—	2	2
Cystitis	1	—	—	—	—	—	1
Nephritis	13	—	—	1	—	6	6
	657	161	61	36	25	179	195

* Over 65 years, 30 deaths; 80, 38; 90, 11.

A.—NOTIFIABLE SPECIFIC DISEASES.

DIPHTHERIA.

The large number of 179 cases of Diphtheria were notified during the year. As is usually the case a larger proportion of cases occurred in the country than in the town of St. Peter-Port. Diphtheria is the one instance of a notifiable disease which shows a tendency to a steady increase in number of cases in England and Wales, and the same increase seems to hold good in Guernsey. The largest number of cases as a rule occur in the last three months of the year; but that was not our experience here in 1902, as June and July were conspicuous by the number of cases notified during these months, a number more than twice the average of the other months of the year.

Mr. Collenette's valuable Meteorological observations (which are published at the end of my report) show that the amount of Sunshine was very deficient in the end of May and first half of June, but during the third week in July the Sunshine reached the highest point of the year, when the number of cases of Diphtheria quickly decreased.

The most serious outbreak of the year was that which occurred in the Vale and St. Sampson's during this period, the Town parish also contributing fourteen cases to the number during the month of July. The outbreak started quite suddenly in St. Sampson's and apparently with four or five distinct foci of infection. The New Road Schools, the ones which suffered the most, were promptly closed and disinfected. Upon the re-assembling of the Schools the teachers and children were all carefully examined, with the result that membrane was found in the throats of five children, who were at once dispatched to the Fever Hospital from the School, the parents being first communicated with. Eleven throats were suspicious, and cultures of them were taken, with the result that eight were also found to be suffering from the disease. As Dr. Hoare, the M.O.H., was away from the island at the time, this work devolved upon me, and I have to acknowledge how greatly I am indebted to Dr. Chas. Jones for his invaluable help so readily given during this period. The schools were again closed and disinfected and the back of the epidemic was broken, although sporadic cases continued to occur during June and July.

In three days 15 cases were admitted into the Board's Hospital, which I am pleased to say proved quite equal to coping with this sudden influx.

Several cases have been traced to the laying of new drains, and the consequent disturbance of earth, which, saturated with filth, had served as a focus for the disease.

I now have to deal with the incidence of the disease in the three country parishes of St. Pierre-du-Bois, Forest and Torteval. The former with an estimated population of 1,587 had 14 cases, Forest with 851 had 16, and Torteval with 447 had 14 cases. It is well known that Diphtheria is particularly apt to break out in damp houses, especially when associated with insanitary surroundings, and in a large proportion of the houses attacked in these parishes the houses are built against the side of a hill, with the earth banked up against one or more walls, and privies and middens at the back above the floor levels of the houses.

This excessive prevalence of the disease calls for the very serious consideration of the parish authorities concerned, more particularly as the cases did not appear in epidemic form.

It is with pleasure one notes the comparative absence of Diphtheria in the parish of St. Saviour's, as only five cases have occurred during the past four years, and one during this year, of exceptional prevalence.

I understand that the Sanitary authorities of this parish are particularly careful about all matters connected with sanitation, and their care seems to have been followed by particularly satisfactory results.

I have included in this year's report a new table showing the number of cases removed to the Board's Hospital and those isolated at home. One hundred and four cases were treated at the hospital with 5 deaths, a percentage of 4·8, and 75 cases were isolated at home with 12 deaths, a percentage of 16.

From these figures it might appear that a larger proportion of milder cases were removed to the hospital than were isolated at home; but such is not the case as far as my experience goes, removal to hospital being largely a matter of the parish in which the patient resides. For examples, in St. Peter-Port, out of 52 cases, 37 were removed to hospital, in St. Sampson's 39 out of 46, and Castel 6 out of 7 cases. In St. Pierre-du-Bois only 1 out of 14, in Torteval none out of 14, and in Forest 4 out of 16 cases were so removed.

Diphtheria is a disease which requires most constant and careful attention to avoid untoward results, and apart from all considerations of public safety, it seems lamentable that parents do not avail themselves more of the Board's Hospital and its skilled nursing, provided for their advantage.

Table B.

DIPHTHERIA.—CASES NOTIFIED AND NUMBER OF DEATHS.

Parish.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total	Population estimated to middle of 1902.	Attack rate per 1,000.
St. Peter-Port	3	5	3	4	3	2	14	1	2	4	4	7	52	18,240	2·8
St. Sampson's	2	1	...	1	1	17	10	2	5	1	5	1	46	5,622	8·3
Vale	1	1	...	...	...	4	3	1	...	2	3	1	16	5,133	3·1
Castel	...	...	1	...	...	3	...	...	2	...	...	1	7	2,812	2·4
St. Saviour's	...	...	...	...	...	...	...	...	...	1	...	...	1	1,067	0·9
St. Peter-in-the-Wood..	3	1	..	...	...	1	3	...	3	1	1	1	14	1,587	8·8
Torteval	...	...	6	2	2	...	2	...	...	2	...	...	14	447	30·1
Forest	...	...	...	...	...	3	4	1	3	2	3	...	16	851	18·8
St. Martin's	..	...	...	...	...	...	2	2	3	...	2	1	10	3,226	3·1
St. Andrew's	..	...	...	...	...	...	1	...	1	...	1	...	3	1,564	1·9
Total	9	8	10	7	6	30	39	7	19	13	19	12	179	...	...
Deaths—Town	...	2	...	...	1	...	1	...	...	...	...	1	5	...	...
Country	...	...	3	1	...	1	1	...	...	1	...	4	11	...	...

SCARLET FEVER.

One hundred and sixteen cases of this disease were notified during the year, and the largest number of cases occurred in the first two months of the year, an unusual condition, the autumn months being commonly those with heaviest incidence. In contradistinction to Diphtheria, urban districts suffer more heavily than rural, and this has been the case in Guernsey. For the first nine months of the year, the type of disease did not vary from that seen in the last few years in Guernsey, *i.e.*, it was mild, but the few cases occurring after that were all of severe type, with bad throats and well marked rashes, the patients being acutely ill.

On account of the usual mildness of the disease, a certain number of cases probably escape notification, and as the virus of the disease can persist for very long periods in rooms, books and clothes which have not been disinfected, it is easy to see how cases can occur without our being able to trace their source of infection. No cases have been traced to milk infection. It has not been necessary to close any schools during the year, the number of cases in any one school not being great enough to warrant this measure. One case terminated fatally during the year; a child of five years old, who died of acute kidney disease, and was ‘ peeling” at the time of death. The surroundings of this child were very bad, and a few days after its death another younger child died with exactly the same symptoms, so that there can be little doubt but that its death occurred from the same cause as the elder one. For the second child another doctor was consulted, and he only saw it when “in extremis,” as he was not informed of the previous fatality, its death was not registered as being due to Scarlet Fever.

Table C.

SCARLET FEVER.—CASES NOTIFIED.

Parish.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total
St. Peter-Port	13	13	5	5	2	...	4	7	...	1	1	1	52
St. Sampson's	4	1	3	4	2	..	1	1	...	...	...	...	16
Vale	1	1	3	1	...	1	...	1	...	...	3	...	11
Castel	1	...	2	...	...	...	...	...	...	...	...	...	3
St. Saviour's	...	5	...	...	...	...	...	...	...	...	...	...	5
St. Peter-in-the-Wood	...	1	...	...	...	...	...	...	...	...	..	...	1
Torteval	...	...	...	...	...	...	...	...	...	...	...	...	0
Forest	...	...	...	...	...	...	1	...	..	...	...	...	1
St. Martin's	3	8	1	5	1	...	3	...	...	2	...	...	23
St. Andrew's	3	...	..	...	...	...	...	...	1	...	..	...	4
	25	29	14	15	5	1	9	9	1	3	4	1	11

ENTERIC FEVER.

Five cases were notified during the year, four occurring in St. Peter-Port and one in St. Martin's. None of these cases were removed to the hospital and no deaths occurred.

Three were notified in the autumn, and two in the earlier part of the year.

One was probably due to the consumption of oysters, and in another instance the patient had been drinking water from a well which has been known to have been badly contaminated with sewage, the water being discoloured and foul smelling, and a defective drain running within four feet of the well. This well was promptly closed, and the drains and sanitary arrangements of the group of houses surrounding it thoroughly overhauled.

In a third case the patient had been removing some disused soil pipes, and his attack was attributed by Dr. Hoare to this cause. The cause of the other two cases could not be traced. The incidence of Typhoid Fever in Jersey is much heavier than in Guernsey, as 30 cases occurred in 1901, and 50 in 1902.

SMALL POX.

One case was reported as Small-pox during the year, an infant ten months old, who although said to be vaccinated, showed no very definite scars. This case fortunately proved to be only a severe attack of Chicken-pox.

As regards primary vaccination in Guernsey, I believe that children are well protected; but although the recent epidemics in England have caused a certain number of persons to be re-vaccinated, the great importance of re-vaccination does not seem to be sufficiently appreciated, and the adult population is not therefore in such a satisfactory condition.

The fitting up by the Board, of Mont Crevelt battery as an Isolation Hospital for this disease, has placed us in a very favourable position for dealing with it, should it arise, as it is at all times ready for immediate occupation.

Few places with the population of Guernsey have such good provision for a sudden emergency.

NOTIFIABLE SPECIFIC DISEASES.

Table III.

CASES OF INFECTIOUS DISEASES NOTIFIED, 1902.

CLASSIFIED ACCORDING TO AGES.

	At all ages.	0—1	1—5	5—15	15—25	25—65
Diphtheria	179	2	36	104	23	14
Scarlet Fever	116	2	40	62	7	5
Enteric Fever	5	...	...	...	1	4
Total	300	4	76	166	31	23

CASES OF INFECTIOUS DISEASE

NOTIFIED IN THE THREE PRECEDING YEARS AND FOR 1902.

	Diphtheria.	Scarlet Fever.	Enteric Fever.	Total.
1899	121	117	11	249
1900	80	102	3	205
1901	66	141	6	213
1902	179	116	5	300

INFECTIOUS DISEASES.

NUMBER OF CASES TREATED IN ISOLATION HOSPITALS AND AT HOME.

	St. Peter-Port.	St. Sampson's.	Vale.	Castel.	St. Saviour's.	St. Peter-in-the-Wood.	Torteval.	Forest.	St. Martin's.	St. Andrew's.	Total.
Diphtheria—											
In Hospitals	37	39	9	6	1	1	...	4	6	1	104
At Home............	15	7	7	1	...	13	14	12	4	2	75
Total	52	46	16	7	1	14	14	16	10	3	179
Scarlet Fever—											
In Hospitals	26	5	6	0	2	1	...	...	10	1	51
At Home............	26	11	5	3	3	...	...	1	13	3	65
Total	52	16	11	3	5	1	...	1	23	4	116
Enteric Fever—											
In Hospitals	2	...	...	...	...	...	...	...	...	...	2
At Home............	2	...	...	...	...	...	...	...	1	...	3
Total	4	...	...	...	...	...	...	...	1	...	5

DEATHS OCCURRING IN CASES OF NOTIFIABLE INFECTIOUS DISEASE

REMOVED TO HOSPITALS AND IN THOSE ISOLATED AT HOME.

	St. Peter-Port.	St. Sampson's.	Vale.	Castel.	St. Saviour's.	St. Peter-in-the-Wood.	Torteval.	Forest.	St. Martin's.	St. Andrew's.	Total.
DIPHTHERIA—											
In Hospitals	1	1	...	...	...	1	...	1	1	...	5
At Home..................	4	3	...	...	...	...	5	...	...	...	12
Total	5	4	...	...	...	1	5	1	1	...	17
SCARLET FEVER—											
In Hospitals	...	...	...	...	...	...	...	...	...	...	0
At Home..................	...	1	...	...	...	...	...	...	...	...	1
Total	...	1	...	...	...	...	...	...	...	...	1
ENTERIC—											
In Hospitals	...	...	...	...	...	...	...	...	...	...	0
At Home..................	...	...	..	...	...	...	...	...	...	...	0
Total	...	...	...	...	...	...	...	...	...	...	0

B.—NON-NOTIFIABLE DISEASES.

WHOOPING COUGH.

Four deaths, all in children under one year old, were due to this disease, this being in marked contrast to the year 1901, when no fewer than 47 deaths were due to this cause. It is quite usual after a severe and fatal epidemic to have two or three years of comparative absence of the disease.

MEASLES.

Few cases of Measles occurred during the year, and as far as I am able to judge, they were mostly of a mild type, as only two deaths are returned. The same number of deaths occurred in 1901.

EPIDEMIC ENTERITIS.

Thirteen deaths occurred from this disease against 27, 22 and 39 in the three preceding years. Nine were in the town and four only in the country.

On the whole the summer of 1902 was not a warm one, and the earth temperature was apparently not high enough for the development of this disease.

TUBERCULOSIS.

Seventy-seven deaths were registered as being due to Tubercular disease in its many manifestations, and two-thirds of the number were due to Pulmonary Phthisis.

These figures are in both instances exactly the same as those recorded last year, and mean that one in every 8·5 deaths is due to Tuberculosis.

During the last fifty years the death rate from Phthisis in England and Wales has steadily fallen from 2·7 to 1·31 per 1,000, a result largely due to better drainage of soil, better and drier houses, and to regulations directed against overcrowding. In Guernsey the rate is 1·25 per 1,000, but one cannot compare it with the figures of fifty years back as no statistics are available.

From this year's figures it does not appear that the death rate from Tubercular Diseases is high in infants and young children, but under our present system of death registration these figures must be accepted with reserve, as the causes of infantile death are so loosely recorded, no fewer than 51 cases being stated to be due to "Convulsions." Professor Koch's statement that "Bovine Tuberculosis is different from human Tuberculosis, and that they are not intercommunicable," has not been generally accepted, and it is a remarkable fact that Tuberculous cows injected with Tuberculin give the characteristic re-action whether the Tuberculin be derived from human or bovine Bacilli; but as the cattle in Guernsey have been proved to be so free from Tuberculosis, this question does not affect us so greatly.

We have now to consider other sources of infection. Milk may be infected by a person suffering from the disease, or what is a more common occurrence, direct infection from people.

The former question will be referred to later on, but the fact that dried sputum retains its vitality for very long periods, and the baccili are found in the dust and walls of infected houses, should make us consider the advisability of disinfecting rooms as is done for other infectious diseases.

The long course of the disease, and the fact that the patients often infect a whole house by occupying at times all its rooms, and the objection by the public to notification, make it a very difficult matter to carry out. The Board have recognized this principle and allow disinfection in such cases if it be asked for; unfortunately this is very seldom done.

An instance came under my notice where seven deaths had occurred from Phthisis in one house, the last about 2½ years ago. With some difficulty I persuaded the father of the family to allow the whole of the house to be disinfected. This has been followed by marked improvement in the general health of the remaining members of the family, none of whom have since shewn any signs of the disease.

INFECTIOUS HOSPITALS.

One hundred and fifty-five cases were removed to the hospitals during the year. Whilst the Diphtheria epidemic prevailed it was necessary to transfer patients when convalescent to the Castel Isolation Hospital, who were admitted as acute cases to the Town Isolation Hospital.

The need of small isolating wards was greatly felt, but I am pleased to say that no patients contracted other diseases than those for which they were admitted, with the exception of a few cases of Chicken Pox, which fortunately is not a severe disease.

The new Sanitarium completed in October was opened by the Bailiff in December, but no patients were admitted before the commencement of 1903.

SANITARY INSPECTOR.

The following are some details of the work Mr. Le Brun has carried out during the year.

Articles Disinfected.

Blankets, sheets and counterpanes	1,869
Bolsters and pillows	807
Feather and flock beds	281
Mattresses	564
Sundry articles	6,137

Rooms disinfected	310
Houses visited and re-visited	448
Cases removed to Hospitals (this does not include transfers from one hospital to another)	155
Schools disinfected	St. Sampson's, New Road. Ste. Magloire, l'Islet. Torteval.

In spite of the large amount of work that has been done this year there have been no valid complaints made, therefore no compensation has had to be paid for damaged articles. I think this fact will show how admirably and thoroughly Mr. Le Brun has carried out his duties, even though the work was at times extremely heavy.

WATER SUPPLY.

The water supply of the island is now being seriously considered by a special Committee, who have received the report of an expert upon the best means of procuring an adequate supply of water.

OFFENSIVE TRADES.

The only complaint that has been made concerned a knackery which existed upon the Banks, not far from the Bouët. For a long time past this had been a source of great annoyance and danger to the people living in its vicinity, but it has now been done away with, the business being carried on in St. Andrew's parish in, I presume, a less populous neighbourhood.

SCAVENGING.

The Refuse Destructor Committee did not come to any decision during the year, but the urgent need of such means for effectually destroying rubbish seems to be thoroughly appreciated. There is apparently an idea prevalent that this is a matter concerning only the Town Parish and perhaps St. Sampson's, but the need of the removal of rubbish is equally great from many houses in the country parishes. In small houses, where the tenants are frequently changing, large heaps of rubbish accumulate quite close to the houses, and serve as food for disease, but no one seems to take the trouble to remove them. In the Town Parish every house ought to be provided with a properly covered iron receptacle, instead of the rubbish being placed in old baskets, boxes, &c., often placed on the pavement to be scattered by the dust as is now often done.

The collecting carts are thoroughly unsuitable for their work, as they are of wood without any proper covering; suitable covered iron ones should be substituted for them.

The enormous amount of offensive refuse that has accumulated at the Rabbit Warren is a constant menace to the public health, and when the destructor has been erected, this refuse should be dealt with, with as much dispatch as possible.

About three years ago the Board approved of a draft law on matters affecting Public Health, but unfortunately this draft has not yet been brought before the Royal Court.

In some ways the work of the Board is carried out in a manner that will compare most favourably with any place of its size. I refer most particularly to our methods of prompt removal to hospital, hospital treatment, and the thoroughness with which disinfection is carried out.

When one comes to the remedying of sanitary defects, it is another matter; so many different authorities have to be consulted, and these authorities are so frequently changed that it is often difficult to get these matters attended to; the process is both indirect and cumbersome, and a source of much extra work to the Board and its officials. The want of this law which should have preceded the recent drainage works, has prevented our having definite requirements as regards sanitary matters, which the public could themselves familiar with.

Two matters which in addition appear to be specially important are the supervision of dairies and dairy farms, and an examination of the sanitary arrangements of new houses prior to their occupation.

I must ask for your kind indulgence as regards the incompleteness of this report, but as you know for three quarters of the year in review, I was not in office.

I desire to express my hearty thanks to the Board for the constant help and support they have given me during the whole of the time I have been associated with them.

HY. DRAPER BISHOP, M.D., M.O.H.

Mr. T. J. Guilbert's Report.

Surveyor's Department, States Office, Guernsey.

Progress of the Drainage of St. Peter-Port and St. Sampson's, since the date of my report of July 26th, 1902, published with the M.O.H.'s annual report, published in the Billet d'État of November 14th, 1902, page 25 of appendix.

ST. PETER-PORT.	Sewer. New. Feet.	Sewer. Recon-struction. Feet.	Houses.	Estimated Population.	W.C. Accommodation. Having Mechanical Flushing.	W.C. Accommodation. Without Mechanical Flushing.	W.C. Accommodation. Total.
Route Isabelle	1,310	...	...	...	...	...	...
Stanley Road	440	...	21	88	...	...	24
York Avenue	640	...	9	36	...	...	13
Fuzzey's Lane	...	129	3	30	...	...	3
Bosq Lane	...	490	9	46	...	...	15
Petit Bouët (east end) ...	...	182	27	173	...	...	28
Tower Hill Slip	...	239	9	80	...	...	12
	2,390	1,040	78	453			95
			·67	miles.			
Summary.							
St. Peter-Port	2,390	1,040	78	453	...	...	95
Previously reported upon	23,418	7,867	1,089	5,445	...	...	...
St. Sampson's, previously reported upon	13,838	...	312	1,786	17	305	322
	39,646	8,907	1,479	7,684			

Total length of Main Drains.—New Drains	7·48 miles.
Drains re-constructed	1·69 „
Total...	9·17 „
Sewer Outfall	·23 „
	9·40 „

Total houses served by the above Drains	1,478
Total population „ „	7,684

A considerable amount of jointing not executed last year has been done at the lower extremity of the New Outfall at Hougue-à-la-Perre, and preparations have been made for the laying of the eight pipes remaining to complete it, but unfortunately the tides have not permitted to lay them. This might have been done by diving, but we have always thought that this expense could be saved.

The drainage extension of the N.W. portion of the parish, which I may say works well, may be looked upon as practically completed, there being no extension, as far as can be seen at present, demanding immediate attention, with the exception of the south end of Amballes Road, for which a contract is given to lay a main to take three houses, now draining into cesspools. There are several old sewers to be reconstructed this year. Those already reconstructed have proved very leaky in many cases. The work of reconstruction has disclosed many extremely defective branches, as well as the insufficiency, and in some cases the total absence of W.C. accommodation, and this has been attended to as much as possible.

My scheme of extension for the thickly populated portion of St. Sampson's, still undrained in the neighbourhood of the Harbour, will, I hope, be submitted to the States shortly.

In conclusion, I could not but emphasize the remarks contained in my aforesaid report of the 26th July, 1902, with reference to the legislative powers urgently needed, in connection with private branches, sanitary accommodation and a water supply.

T. J. GUILBERT,
States Surveyor.

REPORT ON THE RAINFALL, SUNSHINE AND TEMPERATURE, OF GUERNSEY DURING 1902,

WITH REFERENCE TO THE INCIDENCE OF SCARLET FEVER AND DIPHTHERIA.

The above elements of weather and their influence on Public Health are best treated by means of Curves, therefore that mode of conveying information has been adopted and these remarks will be confined to making the curves more easily understood than if printed without explanation.

A few points it is necessary to note. First: The plan of reversing the curves of Sunshine and Rainfall has been adopted, because by that means the fact that increase of sunshine and rain tend to diminish the disease is made more evident by the curves following each other's movements instead of crossing. Second: The effects spoken of frequently follow a movement of a curve rather than appear co-incident. Third: The totals and means are worked out for each week in order to enable the weekly returns of the M.O.H. to be referred to and used in the production of the curves.

It must be remembered that no weather element can *cause* the diseases discussed, and this report can only show the effect of variations in the incidence of the diseases as far as the elements discussed are able to influence, as a separate factor, them. Thus Sunshine is supposed to destroy the germs of Scarlet Fever; it therefore follows that a deficiency of Sunshine at any time of the year would re-act on an epidemic, *when there is one,* by permitting it to grow to unusual dimensions, but the deficiency would not be the *cause* of the epidemic. The same reasoning applies to *Rainfall,* a copious rainfall at any season would tend to decrease the diseases spoken of by washing their germs into lower levels in the soil and down the streams. As a rule increase of temperature is favourable to the development of these diseases, but here again the epidemics can only be encouraged when they exist.

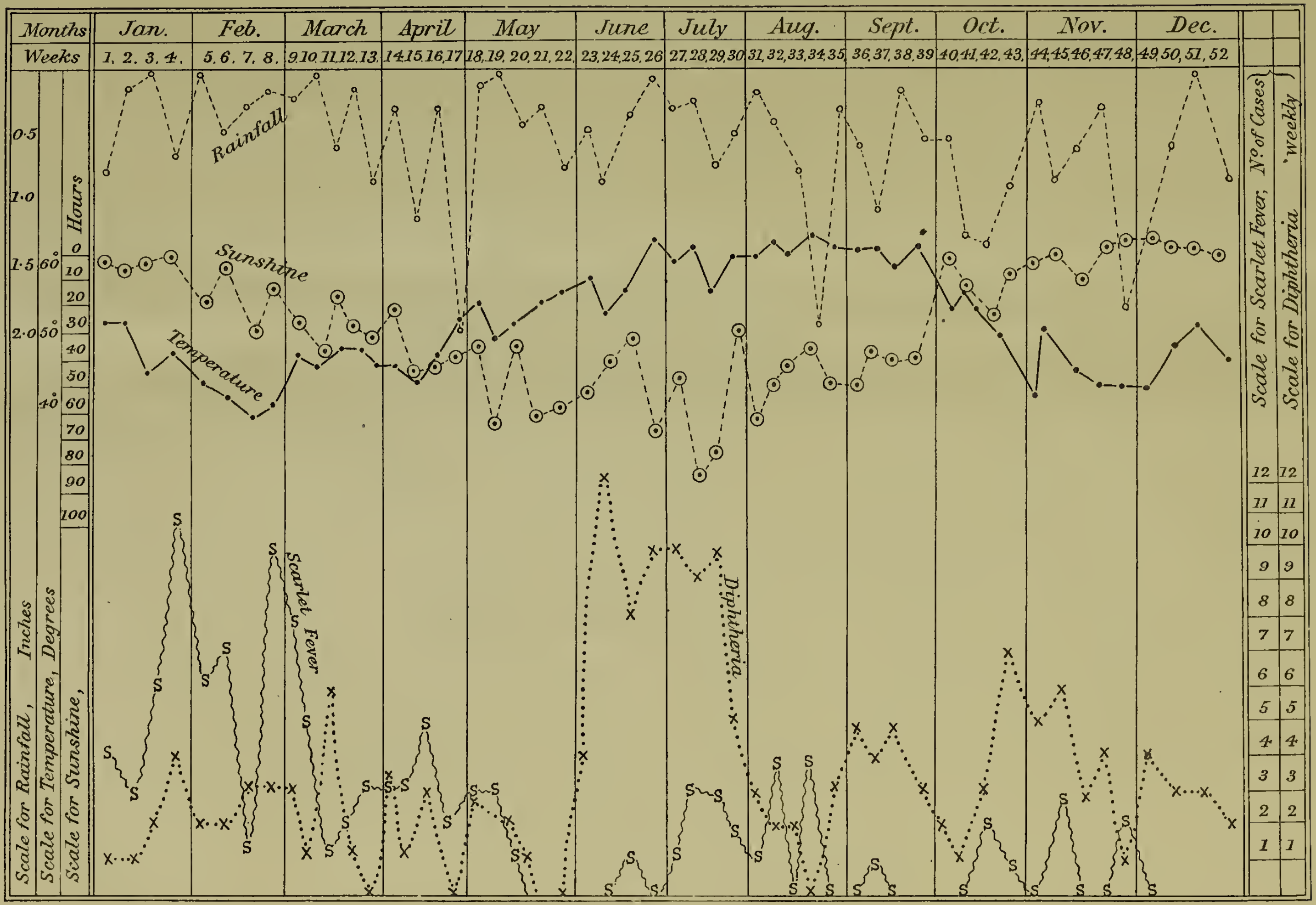
Scarlet Fever, Diphtheria and other diseases frequently recur in cycles, such recurrences are modified or encouraged by weather, hence it is that such large variations and apparent inconsistence occur.

These rules applied and studied with the curves enable the true influences at work being understood.

The outbreak of Scarlet Fever occurring during the first three months of the year was probably rendered more possible by the want of severe cold during the winter 1901-2. It was also encouraged by the want of sunshine at that season. Its variations agree with the variations of the sunshine which must be taken as influencing the epidemic. That it gave way instead of increasing with the increase of temperature was no doubt due to the isolation of the cases

GUERNSEY 1902.

Weekly Curves of Temperature, Sunshine and Rainfall compared with those of Scarlet Fever and Diphtheria.



aided by the increase of sunshine. Scarlet Fever is usually prevalent during the autumn when its curves advance as the sunshine diminishes; this year the epidemic was abnormal in its incidence.

Diphtheria was also abnormal in its incidence. Although occurring at all times in the year, the maximum usually occurs during the last three months of the year. This year the epidemic occurred during June and July, encouraged no doubt by the deficiency of sunshine and rainfall during those months. The two sunny weeks in July were immediately followed by a falling off of cases. The sunshine aided by the isolation of cases was no doubt a factor in the causation of the diminution occurring at the end of July. Diphtheria and Enteric Fever (including Diarrhœa) are largely influenced by the temperature of the soil. The next report will give curves of this temperature which has been made possible by the addition of five underground thermometers to the series of instrument.

Speaking generally, the curves show more in the agreement of the variations than in the actual positions of the weekly dots.

Sunshine was below the average for the year by 177·33 hours. The variations of the individual months are shewn in the following table:—

Table I.

SUNSHINE, GUERNSEY, 1902.—Station: Hauteville.

Months.	Totals in Hours.				Sunless Days.		Possible Sunshine.	
	1902.	Average of Nine Years.	Above the Average.	Below the Average.	1902.	Average of Nine Years.	1902. Percentage.	Monthly Totals. Hours.
January	28·74	52·56	...	23·82	15	10	11	269
February......	81·13	84·11	...	2·98	5	7	27	294
March	123·66	139·33	...	15·67	3	3	37	367
April	195·46	194·18	1·28	...	3	1	48	408
May............	244·21	259·39	...	15·18	1	1	51	472
June	211·15	264·00	...	52·85	1	0	44	481
July.....	285·55	287·26	...	1·71	0	0	59	484
August	217·81	250·32	...	32·51	1	1	49	442
September ...	179·37	189·33	...	9·96	1	1	47	376
October	90·25	113·68	...	23·43	5	3	27	331
November ...	67·77	67·82	...	0·05	8	8	25	271
December ...	42·89	43·34	...	0·45	10	11	16	255
Totals ...	1767·99	1945·32	...	177·33	53	46	39	4454

Rainfall was also below the average and nine months out of the twelve were dry. The detail of the year is given in the following table.

Table II.

GUERNSEY RAINFALL FOR 1902.

Results of Observations at six Stations compared with the Averages.

Months.	1902.							The 60 Years' Averages.	Six Stations. Differences from the 60 Years' Averages.	Differences from the 60 Years' Averages. Hauteville only.	Means of the four first Stations for Six Years.
	Hauteville.	L'Ancresse.	Claire Mare.	Les Blanches.	St. George.	Grange.	Means of the six Stations.				
January	2·30	2·06	1·71	1·89	3·10	1·83	2·15	3·81	—1·66	—1·51	2·65
February	1·57	1·74	1·58	1·68	0·90	1·46	1·49	2·62	—1·13	—1·05	2·99
March	2·26	2·20	1·62	2·18	2·10	1·78	2·02	2·47	—0·45	—0·21	2·28
April	3·76	3·58	3·61	3·73	4·35	3·52	3·76	2·35	+1·41	+1·41	2·96
May	1·80	1·78	1·45	1·93	1·75	1·74	1·74	2·15	—0·41	—0·35	2·09
June	2.38	2·49	1·70	2·24	2·47	2·12	2·23	2·01	+0·22	+0·37	1·89
July	2·08	1·50	1·79	2·16	1·94	1·75	1·86	2·20	—0·34	—0·12	1·10
August	3·81	3·94	3·25	3·97	4·06	3·75	3·58	2·42	+1·16	+1·39	3·74
September	2·44	2·71	2·72	2·62	3·30	2·30	2·68	3·11	—0·43	—0·67	2·62
October	4·01	3·31	2·84	3·50	4·09	3·10	3·47	4·83	—1·36	—0·82	2·50
November	3·66	3·33	3·10	3·42	4·19	3·24	3·49	4·40	—0·91	—0·74	3·55
December	3·91	4·10	3·13	3·34	4·33	3·47	3·61	4·15	—0·54	—0·24	4·39
SEASONS.											
Jan.-March	6·13	6·00	4·91	5·75	6·10	5·07	5·66	8·90	—3·24	—2·77	7·92
April-June	7·14	7·85	6·76	7·90	8·57	7·38	7·73	6·51	+1·22	+1·43	6·94
July-Sept.	8·33	8·15	7·76	8·75	9·30	7·80	8·12	7·73	+0·39	+0·60	7·46
Oct.-Dec.	11·58	10·74	9·07	10·26	12·61	9·81	10·57	13·38	—2·81	—1·80	10·44
Year's Totals	33·98	32·74	28·50	32·66	36·58	30·06	32·08	36·52	—4·44	—2·54	32·76

January, March, August, September, October, November and December, were slightly warmer than the averages. The remaining months were colder. As a whole the year was nearly normal, being but 1·2 colder than the 60 years' average.

(Signed) A. COLLENETTE, F.R. Met. Soc., F.C.S.

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